

Intermontanus

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Announcements

NEW EDITOR NEEDED

Due to other time commitments I will soon be unable to continue as the editor for *Intermontanus*. Anyone interested in taking over the job should contact me soon so the transition can be as smooth as possible. Even if nobody volunteers, I will make sure the newsletter continues through 1996. —Breck Bartholomew

1996 ANNUAL AMPHIBIAN COUNT

Once again this year, the amphibian count will be held in Zion National Park during the first weekend in May. We will leave Salt Lake at about 4-5:00 pm on Thursday, May 2. Thursday night will be spent getting to know the amphibians and their calls. Friday we will survey some potholes and leopard frog habitat as well as hike around and have a nice day. In the evening we will survey Oak Creek. Saturday will be spent enjoying the Canyon and looking for herps. Saturday night we will again survey for amphibians. We will return home on Sunday.

You don't have to go with the group if you don't want. We will try to arrange car pools for those who cannot drive. Those interested in participating in the amphibian count should contact Breck (801-752-0297) as soon as possible so the camping arrangements can be made.

SCOUT-O-RAMA

Ray Loken is arranging a booth for UTAH at this year's Scout-O-Rama. People are needed to help man the booth. I believe the event is set for May 4th and is one day long. You may contact Breck or Ray for more information about the Scout-O-Rama. Over the years several people have suggested that we participate in events like this or the State Fair so I expect you will be willing to help out!!

New Publications

The Seattle Audubon Society recently published the book *Reptiles of Washington and Oregon* edited by Storm and Leonard. This book is the companion volume to *Amphibians of Washington and Oregon*. Like the amphibian book, the reptile book features nice layout and many photographs. Most species are represented by more than one photograph and illustrate the species' variation. Retail for this book is \$16.95.

Koch & Peterson's book *Amphibians and Reptiles of Yellowstone and Grand Teton National Parks*. Unlike many regional guides, this book discusses each species in great detail; reminiscent of the "old school" of guide books. Even if you don't plan on visiting Yellowstone or the Grand Tetons, this book is well worth the price; \$12.95.

The long awaited book *Snakes of Utah* by Cox and Tanner is finally out. The book features range-maps and photos of each species, as well as brief descriptions. The book costs \$17.95 and is available from the M.L. Bean Museum, BYU, Provo, UT 84602. They may accept phone orders (801) 378- 5052.

HISTORY OF THE UTAH AMPHIBIAN CHECKLIST

George W. Spencer, Jr.

Utah reptiles attracted early scientific interest with many specimens being collected by Charles F. Girard during Stansbury's "Exploration and survey of the valley of the Great Salt Lake of Utah" in 1849 and 1850 (Baird & Girard 1852, Girard 1852). Amphibians, however, did not receive the same attention. Jules Remy (1861), a scientist who was fascinated by Utah lizards, recorded, "The other reptiles of Utah, such as frogs and snakes, offer no great variety of forms." Vasco M. Tanner (1931) observed that "Prior to 1875 . . . nothing was known about the Amphibians of Utah."

Henry C. Yarrow published the first scientific records for Utah in

¹ Girard described *Bufo lamentor* from "Ft. Bridger, Utah" in 1859 (Tanner 1931). Fort Bridger was included in the Utah Territory at the time but was cut out when the territory assumed its final shape in 1868 (Miller 1968).

1875¹ with his report of species (see 1-7 in Table 1) collected during the "Geographical and Geological Explorations and Surveys West of the One Hundredth Meridian". Yarrow and his assistant Henry W. Henshaw had collected over much of the state but concentrated their efforts in the vicinity of Provo and Utah Lake. Yarrow added an eighth species, *Ambystoma tigrinum* (as *Amblystoma mavortium*), with the publication of his checklist and catalogue in 1882. Edward D. Cope was the next author to augment the Utah checklist. In 1889 he added *Pseudacris triseriata* (as *Chorophilus triseriatus*) and *Pseudacris regilla* (as *Hyla regilla*) in his classic *The Batrachia of North America*. At the turn of the century, ten of the sixteen native species had been reported from Utah.

John Van Denburgh and Joseph R. Slevin of the California

Table 1. Chronology of amphibian species reported in Utah

First Reports of Amphibians in Utah				
#	Year	Species ²	Reported as	Reference
1	1875	<i>Bufo woodhousii</i>	<i>Bufo lentiginosus frontosus</i>	Yarrow 1875
2	1875	<i>Bufo boreas</i>	<i>Bufo microscaphus</i> ^{3,4}	Yarrow 1875
3	1875	<i>Hyla arenicolor</i>	<i>Hyla arenicolor</i>	Yarrow 1875
4	1875	<i>Scaphiopus intermontanus</i>	<i>Spea stagnalis</i>	Yarrow 1875
			<i>Scaphiopus couchii</i>	Yarrow 1875
			<i>Scaphiopus couchii varius</i>	Yarrow 1875
5	1875	<i>Rana pipiens</i>	<i>Rana halecina berlandieri</i>	Yarrow 1875
6	1875	<i>Rana pretiosa</i>	<i>Rana septentrionalis</i>	Yarrow 1875
7	1875	<i>Rana onca</i>	<i>Rana onca</i>	Yarrow 1875
8	1882	<i>Ambystoma tigrinum</i>	<i>Amblystoma mavortium</i>	Yarrow 1882
9	1889	<i>Pseudacris triseriata</i>	<i>Chorophilus triseriatus</i>	Cope 1889
10	1889	<i>Pseudacris regilla</i>	<i>Hyla regilla</i>	Cope 1889
11	1915	<i>Bufo punctatus</i>	<i>Bufo punctatus</i>	Van Denburgh & Slevin 1915
12	1918	<i>Bufo microscaphus</i>	<i>Bufo compactilis</i>	Englehardt 1918
13	1922	<i>Bufo cognatus</i>	<i>Bufo cognatus cognatus</i>	Pack 1922
14	1927	<i>Rana catesbeiana</i> ⁵	<i>Rana catesbeiana</i>	Tanner 1927
15	1962	<i>Rana clamitans</i> ⁶	<i>Rana clamitans</i>	Behle & Erwin 1962
16	1970	<i>Scaphiopus bombifrons</i>	<i>Scaphiopus bombifrons</i>	Northern 1970
17	1970	<i>Scaphiopus multiplicatus</i>	<i>Scaphiopus hammondi</i>	Northern 1970
18	1988	<i>Rana yavapaiensis</i>	<i>Rana yavapaiensis</i>	Platz 1988

² Nomenclature follows Bartholomew 1993

³ The toads currently known as *Bufo microscaphus* were first reported in Utah by Englehardt in 1918 under the name *Bufo compactilis*. The name *microscaphus* was revived in 1949. Stebbins (1951) gives the nomenclatural history of the group.

⁴ *Bufo pictus* (now included in *Bufo boreas*) was also described. The type locality was not given but was later designated as Provo, Utah (Schmidt 1953).

⁵ First discovered in Utah in 1926 (Tanner 1931)

⁶ First discovered in Utah in 1961 (Behle & Erwin 1962)

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Academy of Sciences published the first comprehensive checklist of Utah amphibians in 1915 adding *Bufo punctatus* to the list of species known to occur in the state. Two additional species were added quickly in succession with George P. Englehardt of the Brooklyn Museum reporting *Bufo microscaphus* (as *Bufo compactilis*) in 1918 and Dr. Herbert J. Pack, Utah Agricultural Experiment Station Entomologist, reporting *Bufo cognatus* in 1922. With the addition of these species thirteen of the sixteen native Utah species had been reported. It would not be until 1970 (almost fifty years) that another native species would be verified from the state.

Rana catesbeiana was introduced from the eastern United States into Utah sometime during or before 1926 and was reported by Vasco M. Tanner of Brigham Young University in 1927. *Rana clamitans*, also native to the eastern United States, was introduced during or before 1961 and was reported by William H. Behle and Robert J. Erwin of the University of Utah in 1962.

It was not until 1970 that Philip T. Northern of the University of Wisconsin confirmed the presence of *Scaphiopus bombifrons* and *Scaphiopus multiplicatus* (as *Scaphiopus hammondi*) in Utah. James E. Platz of the University of Texas added *Rana yavapaiensis*, the final species on the current checklist, in 1988.

Table 1, summarizes the history of the Utah checklist giving the order of reporting of each species, the year each was first reported, the current species name, the name or names under which each species was reported, and the literature citation.

There has been some disagreement concerning the presence of *Pseudacris regilla* on the Utah checklist. Although many authors (Cope 1889, Slevin 1928, Tanner [Vasco M.] 1931, Wright & Wright 1949, Tanner [Wilmer W.] 1975, and Bartholomew 1993) have included the species in the Utah checklist, others have not.

Robert C. Stebbins has long questioned the occurrence of *Pseudacris regilla* in Utah. Stebbins (1951) explains in *The Amphibians of Western North America*, "I have seen specimens in the collection of Brigham Young University, upon which Utah records have been based. They appear to be *Pseudacris nigrita*. The species may, however, be present in northwestern Utah." Stebbins does not show *Pseudacris regilla* as occurring in Utah in his 1951, 1954, or 1966 works. In his 1985 field guide Stebbins shows the range of *Pseudacris regilla* clipping the extreme northwestern corner of the state but this appears to be the result of Nevada and Idaho records. Other field guides (Smith 1978 and Behler & King 1979) have followed Stebbins in not showing *Pseudacris regilla* as occurring in Utah.

There is also some evidence that the disjunct northern population of *Rana yavapaiensis* occurring in the Virgin River-Lake Mead area Should be included in *Rana onca* (B. Bartholomew, pers. comm.).

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SNAKES! SNAKES? SNAKES.

Robert Nohavec

"Now the serpent was more subtil than any; beast of the field which the Lord God had made. And he said unto the woman, Yea, hath God said, Ye shall not eat of every tree of the garden?"

And the woman said unto the serpent, we may eat of the fruit of the trees of the garden: But of the fruit of the tree which is in the midst of the garden, God hath said, Ye shall not eat of it, neither shall ye touch it, lest ye die.

And the serpent said unto the woman, Ye shall not surely die." (Genesis 3:1-4)

Moses apparently wrote the first few books of the Bible around 1300 BC. Long before, and ever since the writing of this passage humans have been intrigued by snakes. Often this curiosity is expressed as fear. However is this fear of snakes natural, a genetically controlled emotion? Or is it nurtured, caused by society's norms and values? There are a total of 140 references to reptiles in the Christian Bible, 103 in the Old Testament and 37 in the New

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Testament. Most of these passages, 130, are about snakes, the remainder describe lizards or crocodiles (Leonard and Glenn, 1974a, b).

The majority of scriptures about snakes describe the snake as a doer of evil to those who are not faithful, "He that diggeth a pit shall fall into it; and whoso breaketh an hedge, a serpent shall bite him" Ecclesiastes 10:8. The snake is described with words and phrases, "...the cruel venom of asps" Deuteronomy 32:33 and "Surely the serpent will bite without enchantment" (Ecclesiastes 10:11). Only rarely is the snake seen as a direct servant of the Lord, "And the Lord sent fiery serpents among the people, and they bit the people; and much people of Israel died" (Numbers 21:6). Nevertheless, even as the Lord's servants, the snake's portrayal is of a deliverer of doom to the Israeli sinners.

In parts of the Appalachian mountains there are groups of people

who "take up serpents" as part of their religious service. They often use timber rattlesnakes, *Crotalus horridus horridus*, copperheads, *Agkistrodon contortrix*, and occasionally cobras, *Naja* sp. This practice has evolved around the Christian Biblical scripture St. Mark, 16:17-18, "And these signs shall follow them that believe: In my name....They shall take up serpents." These religious fanatics believe that God will protect those who have faith from being bitten by the venomous snakes. Those who are bitten are considered to have lost their special "anointing" by God thereby allowing Satan to penetrate, and the serpent to bite (Pelton and Carden, 1974). As can be seen in many parts of different Christian cultures the snake is illustrated as demonic and a tool of Satan, not to be trusted. Many tales from the Bible are read to children at a young age. The premise that snakes are wicked is also expressed in a non-spiritual process. However all western cultures, ancient and modern, are ancestors to a common Christian prototype.

Nonreligious, popular children's stories portray the snake as evil and dangerous. In Kipling's 1894 classical story, *The Jungle Book*, the snake is the one animal of the jungle not to be trusted. This fiend is always trying to entice the young boy into bad situations. Even the dangerous man eating tiger Kahn, although feared by all in the forest, is respected. The film makers at Walt Disney used a snake to represent Prince John's shady advisor, in their adaptation of Louis Rhead's story Robin Hood. There are many reminders in literature, film and television about the villainous serpents. The idea that the serpent is evil and not trustworthy is deeply embedded at a young age in Western culture. Although the severity of the fear of snakes may vary (Klieger and Gallagher, 1993) many humans are afraid of snakes to some degree (*pers. observ.*; Gibbons, 1983).

In parts of the United States there is an industry that is dependent on human's fear of serpents. This industry is rattlesnake roundups which draw large crowds in some areas of the country (Garrett, 1994). In 1995, 39 roundups were scheduled in seven states (Nohavec, 1995). These roundups focus on people's fear of snakes, especially rattlesnakes. At a rattlesnake roundup, organizers hire "professional handlers" who entice the snakes to strike and defend themselves against cowboy boots while being kicked around. These actors pick up snakes and show off the "deadly fangs", kiss the snakes on the head and other "death defying feats". These people explain to the crowd the dangers of rattlesnakes, increasing their own machismo and the public's fear of snakes (Garrett, 1994; Nohavec, 1995).

The number of humans with an aversion to snakes is so high, one might wonder whether the phobia is genetic? There have been tests on primates to study their response to snakes (Ross, 1982). Two groups of adult monkeys were used in the experiment. Group 1 consisted of monkeys born and raised in a laboratory, and group 2 consisted of monkeys born and raised in the wild, then maintained during their adult life in captivity. Each monkey from each group was placed in a holding cage and exposed to a snake (Fig. 1). The monkeys that were born and raised in the wild, became terrified running and screaming to the back of their cage upon exposure to the snake. An enticement like a marshmallow would not change their disposition toward the snake.

The other monkeys, who had been born and raised in captivity were not frightened by the snake. These monkeys seemed curious and they readily reached into the snakes cage and grabbed the marshmallow. It appears that the wild born monkeys were taught in nature to avoid snakes either by experience or observation.

Human children at a young age are not afraid of snakes, but by their early teens almost all have some degree of fear (*pers. observ.*, Gibbons, 1983; Ross, 1982). Exactly when this change takes place is different for each individual. Very few humans are exposed to live snakes in their life, most only knowing snakes from books, television or movies. What factors cause this change and why are uncertain. Of course some individuals may be exposed to snakes in a very negative situation, (i.e. snakebite) causing a phobia to occur. Still, the incidence of snakebite is relatively low in developed countries like the United States (Parrish, 1963, 1966, 1980; Straight and Glenn, 1993) so being personally bitten is an unlikely source of the phobia. It appears there is little if any genetic coding in primates, and possibly humans, that could be responsible for the fear of snakes.

More research needs to be done to find the reason for this change. Are humans taught at a young age to be frightened of snakes? If so, why do we teach our children to mistrust the snake. Do all cultures in the world teach this fear of snakes? If not, which cultures do? And which do not? And why? Do people who worship the snake also fear it? Is Christianity possibly to blame for this fear of serpents? In the next paper we will look at snakes in other religions and compare their ideals and norms to Christianity.

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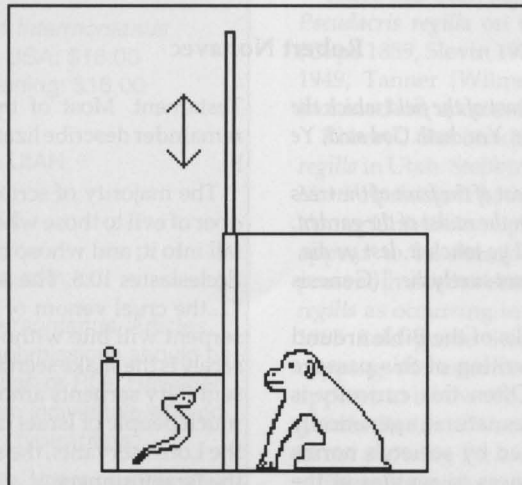


Fig. 1. Diagram of enclosure used in monkey experiment.

In Memoriam:

JAMES LEROY GLENN (1936–1996)

"Cataclysmic events in nature have, at various points of history, greatly diminished certain animals on this planet. The snakes have successfully withstood these events to be confronted with a highly intelligent animal that, through misunderstanding, willfully, and sometimes wantonly, seeks to destroy it. Only through understanding the necessity of sharing this earth with all of its inhabitants, will man endure. The concrete and plastic wilderness we refer to as civilization has already devoured a great portion of the environment, replacing the laws of nature with the laws of man."—James L. Glenn, 1974.

On January 6, 1996 the world suffered the loss of a pioneer in the field of venom research, Utah lost one of its most knowledgeable herpetologists, and many of us lost not only a colleague but a friend.

Jim Glenn was born in Osawatomie, Kansas on February 13, 1936. He graduated from Osawatomie High School in 1954, and three years later married his high school sweetheart, Patricia Verlee Wood. Jim and Pat enjoyed a long and happy marriage until her death in 1995.

Jim's interest in snakes began early in life, and he would often recount stories of his childhood experiences. One incident in particular left him with a lasting impression. As a young boy he captured an enormous copperhead. Realizing that this prize specimen may have been of record size, he brought it to the University of Kansas to get the opinion of the world-renowned herpetologist Edward H. Taylor. After waiting in the lobby for hours he was finally admitted into the laboratory, where, much to his dismay, Dr. Taylor took the specimen and proceeded to drop it into a jar of formaldehyde!

After high school Jim worked as a shoe salesman, but soon after was able to land a job with the railroad. He worked as a brakeman for several years, but by the late 1960's he left the railroad to begin operating a snake park in Oklahoma. Because of his interest in venomous snakes, he began experimenting with self-immunization for snakebite. On that account, through the efforts of C.C. Snyder (University of Utah College of Medicine), R. Straight (VA Hospital), and L. Farnsworth (Hogle Zoo), Jim was lured to Utah primarily to work on the development of a vaccine for snakebite, but also to care for the reptile collection at Hogle Zoo.

Jim became the head of the venom research laboratory at the VA Hospital (later the VA Medical Center) in Salt Lake City, a position he held until his death. He also served as curator of reptiles at Hogle Zoo for over a decade and for the next twelve years as a consultant.

My association with Jim Glenn began over the telephone in the early 1970's. Since I was involved in the commercial reptile trade in Florida, he would often call to obtain venomous snakes for the lab and an assortment of amphibians and reptiles for the zoo. We finally met at a reptile conference in Maryland in 1976. Later he visited me in Florida. Because of my expertise in photographing reptiles (especially rattlesnakes), he arranged for my travel to Texas and later to Salt Lake City to photograph a number of unusual rattlesnakes for a publication he was preparing. Over time Jim and I cemented a strong relationship, and because of that friendship I decided to relocate my family in Utah.

Since one of my main interests is field biology, to get better acquainted with wildlife habitats (especially those of rattlesnakes), before the move I made a field trip to Utah. Accompanied by Gordon Schuett, we spent several days in southern Utah without encountering any rattlesnakes. When we came back to Salt Lake City Jim took us "youngsters" under his wing, and in a matter of days showed us more rattlesnakes and provided us with more information than we could have ever imagined. On account of his

generosity and influence, over the years our interest in western rattlesnakes has only continued to grow.

After his high school graduation Jim chose not to continue with formal schooling; from then on he was self-taught. Although his primary interest was in snake venoms, he was also well versed in many aspects of the natural sciences. On field trips we would spend hours discussing all aspects of western rattlesnake biology, including the glacial events which likely affected their present-day distribution. Jim also had a special interest in rocks, and geology in general. Too many were the times, however, when he would find a "prize" rock in the middle of nowhere, only to have his "boys" carry them across miles of desert to his van. Over the years a collection of these "boulders" began accumulating in his front yard!

For over fifteen years I had the pleasure of accompanying Jim to a number of den sites in southern Utah and southwestern Wyoming. There he would capture and mark rattlesnakes, weigh and measure them, record scale counts, take venom samples, and then release them back into their den. Shouts of joy would occasionally fill the air. I can still recall his excitement upon recapturing a marked specimen... "Oh my, here's number 18! It's been six years since we last found her! She was a yearling then, but now she's fully grown...and look...she's ripe (=ovulating)!" And early in the morning over a warm fire and cup of coffee at Windwhistle campground I can still hear him say, "Look around you boys, and don't forget...this is God's country."

A workaholic, Jim always kept himself busy with a number of projects. For years he assisted the Division of Wildlife Resources draft proclamations and legislation pertaining to the conservation of Utah's amphibians and reptiles; on occasion he would also act as their consultant. With the University of Utah Medical Center he was involved in initiating studies with human anesthetics on reptiles. At the University of Utah he taught a class on serpentology (a term coined by Jim). When he became accredited as a lab animal surgeon, he began experimenting with venomoid surgery on snakes, and was instrumental in making Hogle Zoo the first major zoo collection to employ this procedure. In the mid-1970's Jim served as president of the Utah Herpetologists League, an organization which published a number of unique but informative newsletters. He often spoke to various groups. When presentations included live venomous specimens, his showmanship always kept his audiences mystified and at the edge of their seats. He traveled to India in 1981 where he took hundreds of slides; subsequent slide presentations at his home or at meetings were colorful and informative, but seemed to go on for an eternity!

On the personal side, Jim loved to sing and play acoustic guitar and even wrote some songs. He enjoyed owning and restoring old cars, often reminiscing about his younger days and his "racing '50 Ford coupe." He was an exceptional pool player, and when he worked as a shoe salesman supplemented his income at the local pool hall. He loved most sports, and along with VA and Hogle Zoo personnel would spend many an afternoon playing hours of basketball. His "sweet" outside shot was indicative that he must have been an extremely talented player in his youth.

Jim Glenn's publications leave behind a lasting testament of his contributions to science and the herpetological community (see following list of publications). Sadly, however, his untimely death left behind a number of unfinished manuscripts and research projects. One of Jim's final wishes was to have his long-term and loyal assistant, Bob Nohavec, and other VA personnel see to it that these projects come to fruition. So posthumously, additional contributions may yet come to pass.

Perhaps Jim's greatest contributions were not to science but to humanity. Jim was bitten over three dozen times by venomous snakes and many were serious bites. Because of these experiences and his intimate knowledge of venoms, he became one of the world's premier authorities in the field. He was constantly sought after for advice by doctors treating snakebite (as well as envenomation from spiders & insects). Over the years there's no telling how many lives or limbs he was ultimately responsible for saving, while others took the credit. When an emergency arose, Jim would often provide antivenin or spend entire evenings on the telephone with doctors offering his expertise. His very close friend, George Van Horne, who was bitten by an adult king cobra, is living testament to Jim's knowledge, persistence, and dedication.

Many attributes can be used to characterize Jim Glenn's personality. At times he was charismatic, friendly, down-to-earth, and giving. At times, however, he met with opposition because he

was downright opinionated and equally as stubborn. Thus, he often met with challenges, but when faced with confrontation he seemed to rise to the occasion by meeting matters head-on. Jim was Jim, tough as they come, and in the end he always managed to do things his way. But when it came to dealing with friends, invariably a softer side would emerge. No matter how busy or difficult the task, he was always there and the first to give a helping hand.

Jim Glenn perhaps smoked too much and may have had other shortcomings. But he loved life and lived it to the fullest. More importantly, he had the effect of touching and enriching the lives of those around him. Besides reaching legendary proportions as a giant in his field, we should remember him as a friend who left behind a lasting legacy of nothing but the fondest of recollections.

By **Louis W. Porras**
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PUBLICATIONS OF JAMES L. GLENN

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Classified Ads:

AMERICAN FEDERATION OF HERPETOCULTURISTS. A nonprofit national membership organization of herpetoculturists, veterinarians, academicians, and zoo personnel involved in the captive husbandry and propagation of amphibians and reptiles. Membership includes the highly acclaimed *The Vivarium* magazine,

dedicated to the dissemination of information on herpetocultural accomplishments, herpetological medicine, breeding & maintenance, field studies and adventures, enclosure design and much more. Membership in the AFH is \$26.00. Send information requests to, AFH-News, PO Box 300067, Escondido, CA 92030-0067.

Next Meeting: Thursday, April 4, 1996 at 7:00 pm in room 140 of the U of U James Talmage Building (JTB). **Carole Doubek** will talk about her art which often features reptiles and amphibians. In addition to many awards and exhibits, Carole has been invited to talk in several different states and is well known for her soft sculpture. After the talk there will be a drawing for a copy of the new AVS book *Designing and Maintaining Desert Vivaria*. We will also have a raffle if someone donates a healthy long-term captive (preferably captive born) animal.

Please note I am still trying to reserve the room for the meeting. I will have a back up if we are unable to meet in JTB 140. Notices will be posted if the location is changed.



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